

SPECIFICATION

Inventor:: Ann Marie Janice Bryan
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Subject Matter:: Utility
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Application Type:: (Regular) Nonprovisional
Subject Matter:: Utility
Title:: Wearable Speaker Vest/Jacket with removable sleeves that comes with sport wrist watch & hood speaker headphone.
Also known as vibrator, transducer and subwoofer (To be wireless or Wi-Fi)

BACKGROUND OF THE INVENTION

THE AURA INTERACTOR - VIRTUAL REALITY GAME WEAR

Aura Sound, Inc.

The Aura Interactor - Virtuality Game Wear is a hard black plastic construction backpack-like instrument. Even though, they call it a vest, and it doesn't appears like one. It was originally developed for use on the Sega Genesis and Super Nintendo. This device comes with an AC power adaptor, a control unit, cables, and the backpack that gives you the feedback from your games. Basically, Aura Interactor - Virtual Reality Game Wear do not make this unit anymore. The company stopped producing it in 1995.

The problems with this unit is that you are strapped to it, a quick and easy task, but somehow the act of strapping a piece of hardware on to your body is itself an act of commitment. In other word, you can't just walk away from your computer to walk your dog or go jogging until you either unplug the device or take the unit off.

In reference to an article read about this unit, *Aura Interactor Review Date: 08 January, 2002 Author: Jon Thysell, Guest Writer*, he wrote:

*AURA INTERACTOR VIRTUAL REALITY GAME WEAR
PAST ITS PRIME?*

"I'll be brutally honest: it was cool for a little while. But after wearing it for about an hour listening to some music, it made me feel sick to my stomach. All that vibrating around can get annoying; you can't concentrate at all while wearing it. It isn't so bad in slower paced games like the various Rainbow Six® games, but playing with it in something that requires fast reflexes and concentration like Counter-Strike will just drive you insane.

If you think back to 1994, back when the hottest gaming systems were the Sega® Genesis™ and Super Nintendo®, it would be just fine. But with all of the more recent high intensity games, the Aura Interactor falls short. It should have had a headphone jack though, and a way to mute the garbled sounds coming from the backpack."

Since Aura ceased this product because their unit did not do well in the market due to some flaws, sound defects and being confined to wires and to the AC outlet. Apparently, Aura did not catch on to improve their unit. Based on research, most of their consumers were Deaf and Hard of Hearing. Aura had no interest of plans to advance their technology invention to produce them wireless.

We became drawn to the idea of marketing fashionable wearable apparel - entertainment unit in one piece to be designed wirelessly with multifunction mechanism after the device was discovered from a movie production. It became an original marketing idea. Since 10 years when Aura created the Virtual Reality Game Wear backpack, Technology has advanced. We plan to introduce a fun, fashionable and entertaining transducer speaker vest/jacket for everyone to wear and to enjoy the comfort and convenience of going places wirelessly.

BRIEF SUMMARY OF THE INVENTION

The Wearable Speaker Vest/Jacket is the art of fashion, entertainment, sports, and trend; geared up for the road without any connection to wires to keep anyone indoors. In fact, the Wearable Speaker Vest/Jacket was designed for Deaf and Hard of Hearing people who enjoys vibrations. They will appreciate the sensation of the vibration on the move.

The idea is to seek a manufacturer or company that will make wireless (battery operated) and or (Wi-Fi) based radio wave receiver/transmitter device in all colors.

The speakers vest can and will become a trend because we believe it will attracts and appeals to people who from a variety of racial, class, ethnic, geographical and socioeconomic backgrounds.

WHO WILL BENEFIT:

- Deaf/HOH people
- Urban group
- Kids/Young people
- African American
- Latinos
- Artists
- Filmmakers
- Street people
- Computer geeks
- Rap artists
- Singers
- Musician
- Athletes
- Outdoor people

In summary, the idea is to allow anyone the free will to travel anywhere with the vest/jacket.

We plan to also develop a mechanism that will allow Deaf people to enjoy this unit when they go to the movies. For instance, when they go to the movies, we want to design a prototype control dial button so they can set up the communicator to (M) for movie to activate the transducer to transmit and receive vibration without actually emitting audio or sound. Wi-Fi radio wave is an introduction to that idea.

If they want audio/music, they set up the control dial button to (A) for audio/music; they have the option of wearing a headphone to keep audio from coming out,

even though they will not hear music. Non-Deaf people will appreciate this device.

The goal is to make the speakers as flat as possible, with high-powered bass and lightweight as possible.

WIRELESS TRANSMITTER/RECEIVER SPEAKER VEST

(High-fidelity Subwoofer also known as transducers/vibrator)

1. Wearable speakers vest (to be wireless or Wi-Fi ready)
(THE INITATE DESIGN - SEE DESIGN DRAWINGS 1-5)
2. Wearable speaker vest or jacket with removable sleeve & wrist watch (SEE DESIGN DRAWINGS 6-8)
3. Wearable speaker vest or jacket with "hooded headphone"
ALL IN ONE DESIGN
(SEE DESIGN DRAWING SHEETS 10, 11, 12)

SPECIALIST TEAM

Design Engineering, Industrial Engineering and Audio Engineering.

The inventor has two brothers who are field and electronic Engineers. Consultation received from them will greatly benefit us in developing several working prototype models.

TECHNICAL (RS-426 and DIN 120 ARE COMMONLY USED)
(Expected to work after evaluation and testing:

Thiele-Small Lumped Parameter Model
Thermal Power Handling
Frequency Response
Displacement Power Handling - to check for distortion.
Waterfall Response
Filtering
Integration
Impedance

1. Design the most flattest, most smallest, round or square transducer (at least 1.5 to 2 inches and weighing less than 2 lbs.) with high ends, powers and sensation feeling that consumers can appreciate (wireless) and wear the vest on the go; anytime, anywhere and any place without restricts. The speaker transducer can be placed on the back of the vest (approx. 4 each), left and right top of the front of the vest above the chest line or below where the pouch pockets will be. We have all the options to place the transducers, however they need to be as light as possible and small as possible.

NOTE: *Redrock Acoustics is our main interest and reliable speaker-designing source for the vests. Their 20 years of experiences of transducer design from Ribbon Tweets to high power subwoofers and meet the high demand needs of their clients.*

The best acoustical products begin with a root understanding of how transducers function and end with strict quality assurance. Redrock Acoustics has some of the most sophisticated test equipment available, and in cases where commercial gear was not available, they designed their own. They are based in Tempe, Arizona and they have the ability to perform qualitative tests that define every aspect of a speaker's performance.

*We are convinced that we will find the smallest, powerful and round or square speakers.
It is what we need.*

2. Design lightweight ski typed vests to wear for hours as well as comfort fitting. (We will experiment and test a variety of vests from soft foam core, sturdy nylon, Neoprene, or polyester fabrics) to see which emits more bass power and sensation from the transducer. Then insert wires inside of the vest (SEE DESIGN DRAWINGS SHEET 2)
3. To design a non-auditory transducer instrument (the kinds that could be use with gaming consoles such as PlayStation2 or Xbox – without disturbing anyone else. (This idea design is ideal for Deaf people)
- 3.A To design a full-throttle sound transducer instrument without disturbing others. (For non-Deaf people)
4. Design a battery operate charger to charge the vest power.
- 5 Built-in amplified transmitter/receiver
6. Design a wireless transmitting/receiving or Wi-Fi radio wave coordination (We will test which benefits better wireless or whether transducer speaker works well with Wi-Fi ready, although, interference may be a problem for Wi-Fi ready system since its fairly new)
7. Design a remote control for the vest/jacket with multifunction for multimedia functions for a wireless battery operated:
 - CD player
 - Walkman
 - Fm/AM Radio
 - DVD player
 - Home Entertainment Unit
 - Games
 - Television
 - Movie theaters
 - Laptop
 - Computer
 - Headphone
8. Built-in control dials (i.e., switch off/on) like turning off a cell phone or pager inside the transmitter and receiver buttons on the vest. See drawing sheet design 2.

The idea is to get the remote control and the on/off control dials on the vest to communicate with each other.

The biggest challenge there is "how do we get the speaker transducer vest (sound or no sound) to work with the multimedia entertainment technology without wire connections?"

We are prepared to design all the connections/plugs for multimedia entertainment equipment. For example: the power of the transducer vest is charged, and you're ready to go. You plug a cable into the CD player and into the vest device and put the CD player into the pouch pocket. There, you have your bass and your music rocking your body as you go in for coffee or take your dog out for a walk. You could also plug in your headphone to keep sound from coming out.

9. Design a DVD/CD pouch pocket on the vest/jacket for easy carry around.
10. Design connections: hooks up to TVs, VCRs, CD and audio systems through the supplied connecting cord and plug adapter to preserve battery power.

ADDITIONAL FEATURES

11. Volume controls (for audio/sound options)
12. Added voice coil but must be low frequency to induce high fidelity bass
13. Built in radio (FM/AM)
14. Design removable vest sleeves and design sport wristwatch on one of the sleeves.
15. Built-in wireless superbass headphone to be sewn inside the hood or out.

HEADPHONE TECHNICALS (EXPECATIONS-TRIAL/TRIBULATIONS) (SEE DESIGNS 10, 11 & 12) DESIGN 12 IS CLEARER.

16. Built-in HOOD speaker headphone will featured:
(ideal for skiers, joggers, cyclists, and outdoor athletes.

- 16.A. Design a light weight headphone so that it can be worn comfortably for hours on end.
- 16.B. Open-air or compressed design: lets you continue to hear ambient sound.
- 16.C. 30mm diameter drive units: These internal drivers are larger than on many other portable headphones, resulting in deeper bass, lower distortion and wider dynamic range. Frequency response extends down to a low 18Hz.
- 16.D. 90° transmission angle (maximum): for uninterrupted listening as you move around the room.
- 16.E. PET diaphragms: ensure high rigidity for minimum distortion; low mass for extended high-frequency response out to 22,000Hz.
- 16.F. Wide headband: with a separate self-adjusting band conforms precisely to the curve of your head; stays comfortable, even after listening for hours on end.
- 16.G. Mute function: to avoid noise through the headphones; cuts out the sound when no audio signal is available.
- 16.H. Automatic power switch: for both the headphones and transmitter conserves battery life; when the transmitter senses an input signal, it turns on; the headphones turn on when you place them on your head.
- 16.I. Single volume control: in one earpiece conveniently adjusts the volume for both channels.
- 16.J. Built-in antenna for better reception (wireless-Wi-Fi ready)
- 16.k. Build an infrared technology less prone to Interference

Unlike most other cordless headphones, which typically use radio frequency signals, these headphones use infrared technology. This makes them less prone to interference from other household items that use radio frequency technology, like cordless phones. Plus, multiple LEDs provide an extended 24' coverage range (line of sight).

HEADPHONES

- Type - Open-air or compressed, Dynamic, Cordless
- Drive Unit - 20 - 40mm
- Frequency Response - 18 - 22,000Hz
- Power Requirements - DC 1.5V, 1 NiCad Rechargeable Battery (supplied) or 1 AA battery (optional)
- Battery Life - Approx. 23 hours with supplied NiCad battery; approx. 45hours with optional alkaline battery
- Recharging Time - Approx. 24 hours
- Supplied Accessories - Rechargeable NiCad Battery NC-AA-HJ
- AC adapter
- UniMatch plug adapter
- Connecting cord

Weight - Headphones: 6.3 oz. (180 g), (including battery)
Transmitter: 4.4 oz. (125g)

HEADPHONE TRANSMITTER

- Power Requirements -AC 120V, 60Hz when used with supplied AC power adaptor, which connects to the DC 9V jack
- Audio Input - Stereo L/R phono plugs; supplied 3-foot connecting cord goes from stereo mini plug or phone plug to L/R phono plugs
- Expect effective Range - 24 feet 10 feet
- Power On/Off - Automatic On/Off switch

NOTE:

We will design and test the strength of the bass power far greater than what the normal frequency ears listens to music or sound since most Deaf people like more bass coming from the headphone. It will be designed for Deaf people only.

The purpose is to give them vibrating bass enhancement provides extra power without extra volume needed.

Current designs (photo samples) are still in early stage of development. It was use as props for a movie production. We saw a greater market opportunity for the speaker vest.

Therefore, we believe as the product and the technical develops with the participation of engineers in the expertise in electronic and magnetic, it is our intention to seek a manufacturer that can make them as flat as possible to wear wirelessly.

Drawing design of speaker vest/jacket attached.

Inventor::

Ann Marie Janice Bryan